WHAT IS CLAIMED IS:

1. A delay equalizer connected between input and output terminals, comprising:

a resonance circuit including an inductor and a capacitor and having a resonance frequency for determining a center frequency for delay equalization; and

a variable resistor made variable in resistance,

with a Q value of said resonance circuit being varied by a change of a resistance of said variable resistor to vary a quantity of the delay equalization.

2. A delay equalizer connected between input and output terminals, comprising:

a resonance circuit including an inductor and a variable capacitance capacitor made variable in capacitance and having a resonance frequency for determining a center frequency for delay equalization; and

a variable resistor made variable in resistance,

with said center frequency for the delay equalization being made variable with a variation of the capacitance of said variable capacitance capacitor, and a Q value of said resonance circuit being varied with a variation of resistance of said variable resistor to vary a quantity of the delay equalization.

3. A delay equalizer according to claim 1, wherein a PIN diode is used as said variable resistor, and a power circuit is additionally

provided to control a current flowing through said PIN diode, with the current flowing through said PIN diode being controlled to change an internal resistance of said PIN diode for controlling the quantity of the delay equalization.

4. A delay equalizer according to claim 2, wherein a voltage variable capacitor whose capacitance is made variable through voltage control is used as said variable capacitor, and a power circuit is additionally provided to control a voltage across said voltage variable-capacitance capacitor, with the voltage across said voltage variable capacitor being controlled to vary the resonance frequency of said resonance circuit for controlling the center frequency for the delay equalization.

5. A delay equalizer according to claim 2, wherein an PIN diode is used as said variable resistor, and a first power circuit is additionally provided to control a current flowing through said PIN diode, a voltage variable capacitor whose capacitance is made variable under voltage control is used as said variable capacitor, and a second power circuit is further provided to control a voltage across said voltage variable capacitor, with the current flowing said PIN diode being controlled by said first power circuit to vary an internal resistance of said PIN diode for controlling the quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled by said second power circuit to vary the resonance

frequency of said resonance circuit for controlling the center frequency for the delay equalization.

6. A delay equalizer comprising a plurality of delay equalizing sections each including an inductor, a capacitor and a variable resistor, cascade-connected between input and output terminals, with a resistance of said variable resistor of each of said delay equalizing sections being individually controlled to vary a quantity of delay equalization according to center frequency of each delay equalizing section.

7. A delay equalizer comprising a plurality of delay equalizing sections each including an inductor, a variable capacitor and a variable resistor, cascade-connected between input and output terminals, with a capacitance of said variable capacitor of each of said delay equalizing sections being individually controlled to vary a resonance frequency of a resonance circuit comprising said inductor and said variable capacitor for controlling a center frequency for delay equalization in each of said delay equalizing sections, and a resistance of said variable resistor of each of said delay equalizing sections being individually controlled to vary a quantity of the delay equalization according to center frequency of each delay equalizing section.

8. A delay equalizer according to claim 6, wherein, in each of said delay equalizing sections, a PIN diode is used as said variable

resistor, and a power circuit is additionally provided to control a current flowing through said PIN diode, with the current flowing through said PIN diode of each of said delay equalizing sections being controlled to change an internal resistance of said PIN diode for controlling a quantity of delay equalization.

9. A delay equalizer according to claim 7, wherein, in each of said delay equalizing sections, a voltage variable capacitor whose capacitance is made variable in accordance through voltage control is used as said variable capacitor, and a power circuit is additionally provided for controlling a voltage across said voltage variable capacitor, with the voltage across said voltage variable capacitor of each of said delay equalizing sections being controlled to vary the resonance frequency of said resonance circuit so that the center frequency is varied according to delay equalizing section.

10. A delay equalizer according to claim 7, wherein, in each of said delay equalizing sections, a PIN diode is used as said variable resistor, and a first power circuit is additionally provided for controlling a current passing through said PIN diode, while a voltage variable capacitor whose capacitance is made variable through voltage control is used as said variable capacitor, and a second power circuit is further provided for controlling a voltage across said voltage variable capacitor, with the current flowing through said PIN diode of each of said delay equalizing sections being controlled by said first power circuit to vary an internal resistance of said PIN

diode for controlling the quantity of the delay equalization according to delay equalizing section, and the voltage across said voltage variable capacitor of each of said delay equalizing sections being controlled by said second power circuit to vary the resonance frequency of said resonance circuit for controlling the center frequency according to delay equalizing section.

11. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including an inductor and a capacitor, which constitute a resonance circuit with a resonance frequency for determining a center frequency for delay equalization, and a variable resistor made variable in resistance, with a Q value of said resonance circuit being varied by varying a resistance of said variable resistor for controlling a quantity of delay equalization so that a delay deviation on a frequency-modulated signal transmission line being equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

12. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including an inductor and a variable capacitor made variable in capacitance, which constitute a resonance circuit with a given resonance frequency which determines a center frequency for delay equalization, and a variable resistor made variable in resistance, with the center frequency for the delay equalization being varied by varying a capacitance of said variable capacitor and a Q value of said resonance circuit being varied by varying a resistance of said variable resistor for controlling a quantity of the delay equalization so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

13. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals; optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including an inductor and a capacitor, which constitute a resonance circuit with a resonance frequency determining a center frequency for delay equalization, a PIN diode made variable in resistance, and a power circuit for controlling a current flowing through said PIN diode, with a current flowing through said PIN diode being controlled to vary an internal resistance of said PIN diode for controlling a quantity of the delay equalization so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

14. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light with the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including an inductor and a voltage variable capacitor made variable in capacitance through voltage control, which constitute a resonance circuit with a resonance frequency determining a center frequency for delay equalization, a variable resistor made variable in resistance, and a power circuit for controlling a voltage across said voltage variable capacitor, with a Q

value of said resonance circuit being varied by varying a resistance of said variable resistor for controlling a quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled to vary said resonance frequency of said resonance circuit for controlling the center frequency for the delay equalization so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

15. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including an inductor and a voltage variable capacitor made variable in capacitance through voltage control, which constitute a resonance circuit with a resonance frequency determining a center frequency for delay equalization, a PIN diode made variable in resistance, a first power circuit for controlling a current flowing through said PIN diode, and a second power circuit for controlling a voltage across said voltage variable capacitor, with the current flowing through said PIN diode being controlled by said first power circuit to vary an internal resistance of said PIN diode for

controlling a quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled by said second power circuit to vary the resonance frequency of said resonance circuit for controlling the central frequency for the delay equalization so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

16. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including a plurality of delay equalizing sections, each including an inductor, a capacitor and a variable resistor, cascade-connected between input and output terminals, with a quantity of delay equalization being varied according to center frequency of each delay equalizing section by individually controlling a resistance of said variable resistor of each of the delay equalizing sections so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

17. An optical transmitter comprising:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and including a plurality of delay equalizing sections, each including an inductor, a variable capacitor and a variable resistor, cascade-connected between input and output terminals, with a resonance frequency of a resonance circuit being varied by individually controlling a capacitance of said variable capacitor of each of said delay equalizing sections for controlling a center frequency for delay equalization, and a quantity of delay equalization being varied according to center frequency by individually controlling a resistance of said variable resistor of each of said delay equalizing sections so that a delay deviation on a frequency-modulated signal transmission line is equalized by said delay equalizer to reduce a delay distortion stemming from the delay deviation.

18. An optical transmitter according to claim 16, wherein, in each of the delay equalizing sections, a PIN diode is used as said variable resistor, and a power circuit is additionally provided for controlling a current flowing through said PIN diode, with the current flowing through said PIN diode of each of said delay equalizing sections

being controlled to vary an internal resistance of said PIN diode for controlling a quantity of the delay equalization.

19. An optical transmitter according to claim 17, wherein, in each of the delay equalizing sections, a voltage variable capacitor made variable in capacitance through voltage control is used as said variable capacitor, and a power circuit is additionally for controlling a voltage across said voltage variable capacitor, with the voltage value across said voltage variable capacitor of each of said delay equalizing sections being controlled to vary the resonance frequency of said resonance circuit for controlling a center frequency for each of said delay equalizing sections.

20. An optical transmitter according to claim 17, wherein, in each of the delay equalizing sections, a PIN diode is used as the variable resistor, and a first power circuit is additionally provided for controlling a current flowing through said PIN diode, while a voltage variable capacitor made variable in capacitance through voltage control is used as said variable capacitor, and a second power circuit is further provided for controlling a voltage across said voltage variable capacitor, with the current flowing through said PIN diode of each of said delay equalizing sections being controlled by said first power circuit to vary an internal resistance of said PIN diode for controlling a quantity of the delay equalization according to delay equalizing section, and the voltage across said voltage variable capacitor each of said delay equalizing sections being controlled by

said second power circuit to vary the resonance frequency of said resonance circuit for controlling the center frequency according to delay equalizing section.

21. An optical transmission system comprising:

an optical transmitter including:

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before the optical modulating means and is composed of a resonance circuit comprising an inductor and a capacitor and having a resonance frequency for determining a center frequency for delay equalization, and a variable resistor made variable in resistance, with a Q value of said resonance circuit being varied in accordance with a variation of a resistance of said variable resistor for controlling a quantity of the delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical

transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

22. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a resonance circuit comprising an inductor and a variable capacitor made variable in capacitance and having a resonance frequency determining a center frequency for delay equalization, and a variable resistor made variable in resistance, with the center frequency for the delay equalization being varied in accordance with a variation of a capacitance of said variable capacitor, and a Q value of said resonance circuit being varied in accordance with a variation of a resistance of said variable resistor for controlling a quantity of the delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said

optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

23. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a resonance circuit comprising an inductor and a capacitor and having a resonance frequency for determining a center frequency for delay equalization, a PIN diode made variable in resistance, and a power circuit for controlling a current passing through said PIN diode, with a current flowing through said PIN diode being controlled to vary an internal resistance of said PIN diode for controlling a quantity of delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

24. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a resonance circuit comprising an inductor and a voltage variable capacitor made variable in capacitance through voltage control and having a resonance frequency for determining a center frequency for delay equalization, a variable resistor made variable in resistance, and a power circuit for controlling a voltage across said voltage variable capacitor, with a Q

value of said resonance circuit being varied in accordance with a variation of the resistance of said variable resistor for controlling a quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled to vary the resonance frequency of said resonance circuit for controlling the center frequency for the delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

25. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a resonance circuit comprising an inductor and a voltage variable capacitor made variable in capacitance through voltage control and having a resonance frequency for determining a center frequency for delay equalization, a PIN diode made variable in resistance, a first power circuit for controlling a current flowing through said PIN diode, and a second power circuit for controlling a voltage across said voltage variable capacitor, with the current flowing through said PIN diode being controlled by said first power circuit to vary an internal resistance of said PIN diode for controlling a quantity of the delay equalization, and the voltage across said voltage variable capacitor being controlled by said second power circuit to vary the resonance frequency of said resonance circuit for controlling the center frequency for the delay equalization; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

26. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a plurality of delay equalizing sections, each including an inductor, a capacitor and a variable resistor, cascade-connected between input and output terminals, with a resistance of said variable resistor of each of said delay equalizing sections being controlled individually for controlling a quantity of delay equalization according to center frequency of each of said delay equalizing sections; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver

to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

27. An optical transmission system comprising:

an optical transmitter including;

frequency modulating means for frequency-modulating frequency-multiplexed multi-channel signals;

optical modulating means for intensity-modulating signal light on the basis of the modulated signals obtained by said frequency modulating means for optical transmission; and

a delay equalizer provided before said optical modulating means and composed of a plurality of delay equalizing sections, each including an inductor, a variable capacitor and a variable resistor, cascade-connected between input and output terminals, with a capacitance of said variable capacitor of each of said delay equalizing sections being control individually to vary a resonance frequency of a resonance circuit comprising said inductor and said variable capacitor for controlling a center frequency for delay equalization, and a resistance of said variable resistor of each of said delay equalizing sections being controlled individually for controlling a quantity of the delay equalization according to center frequency of each of said delay equalizing sections; and

an optical receiver for optical/electrical-converting and frequency-demodulating an optical signal transmitted from said

optical transmitter to transmit frequency-multiplexed multi-channel signals,

said delay equalizer equalizing a delay deviation on a frequency-modulated signal transmission line in said optical transmitter and further equalizing a delay deviation on a frequency-modulated signal transmission line in said optical receiver to reduce a delay distortion stemming from the delay deviations from said optical transmitter to said optical receiver.

28. An optical transmission system according to claim 26, wherein, in each of said delay equalizing sections, a PIN diode is used as said variable resistor, and a power circuit is additionally provided for controlling a current value flowing through said PIN diode, with the current flowing through said PIN diode of each of said delay equalizing sections being controlled to vary an internal resistance of said PIN diode for controlling the quantity of the delay equalization.

29. An optical transmission system according to claim 27, wherein, in each of said delay equalizing sections, a voltage variable capacitor made variable in capacitance through voltage control is used as said variable capacitor, and a power circuit is additionally provided for controlling a voltage across said voltage variable capacitor, with the voltage value across said voltage variable capacitor of each of said delay equalizing sections being controlled to vary the resonance frequency of said resonance circuit for controlling the center frequency at every delay equalizing section.

30. An optical transmission system according to claim 27, wherein, in each of said delay equalizing sections, a PIN diode is used as said variable resistor, and a first power circuit is additionally provided for controlling a current flowing through said PIN diode, while a voltage variable capacitor made variable in capacitance through voltage control is used as said variable capacitor, and a second power circuit is further provided for controlling a voltage across said voltage variable capacitor, with the current flowing said PIN diode of each of said delay equalizing sections being controlled by said first power circuit to vary an internal resistance of said PIN diode for controlling the quantity of the delay equalization at every delay equalizing section, and a voltage across said voltage variable capacitor of each of said delay equalizing sections being controlled by said second power circuit to vary the resonance frequency of said resonance circuit for controlling the center frequency at every delay equalizing section.